CLIMATE BENEFITS OF NAJD

BEING A TEXT OF TERM PAPER PRESENTED

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MAIN THEME: CLIMATE BENEFIT/EFFECT OF NAJD

SUBMITTED TO: *PROF. HISHAM MORTADA*

DEPARTMENT OF ARCHITECTURE, KING ABDULAZIZ UNIVERSITY JEDDAH, SAUDI ARABIA.

PRESENTED, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE COURSE:

ARCHITECTURE AND HERITAGE OF SAUDI ARABIA

SEPTEMBER 2020

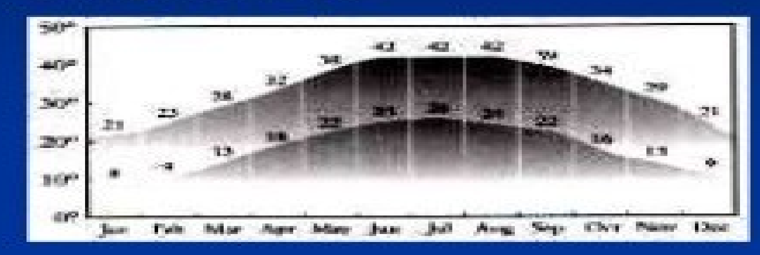

Prince Sultan bin Salman Al Sa'ud's Farm

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Several years ago Prince Sultan bin Salman bin Abd al-Aziz Al Sa’ud invited Mojo to his renovated, al-Udhaibat farm outside of Riyadh. The farm retained its traditional Najdi architecture which enabled people to live in the desert before electricity.

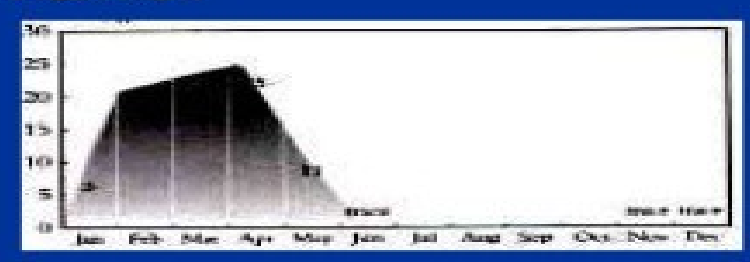
Environment of Najd

Temperature



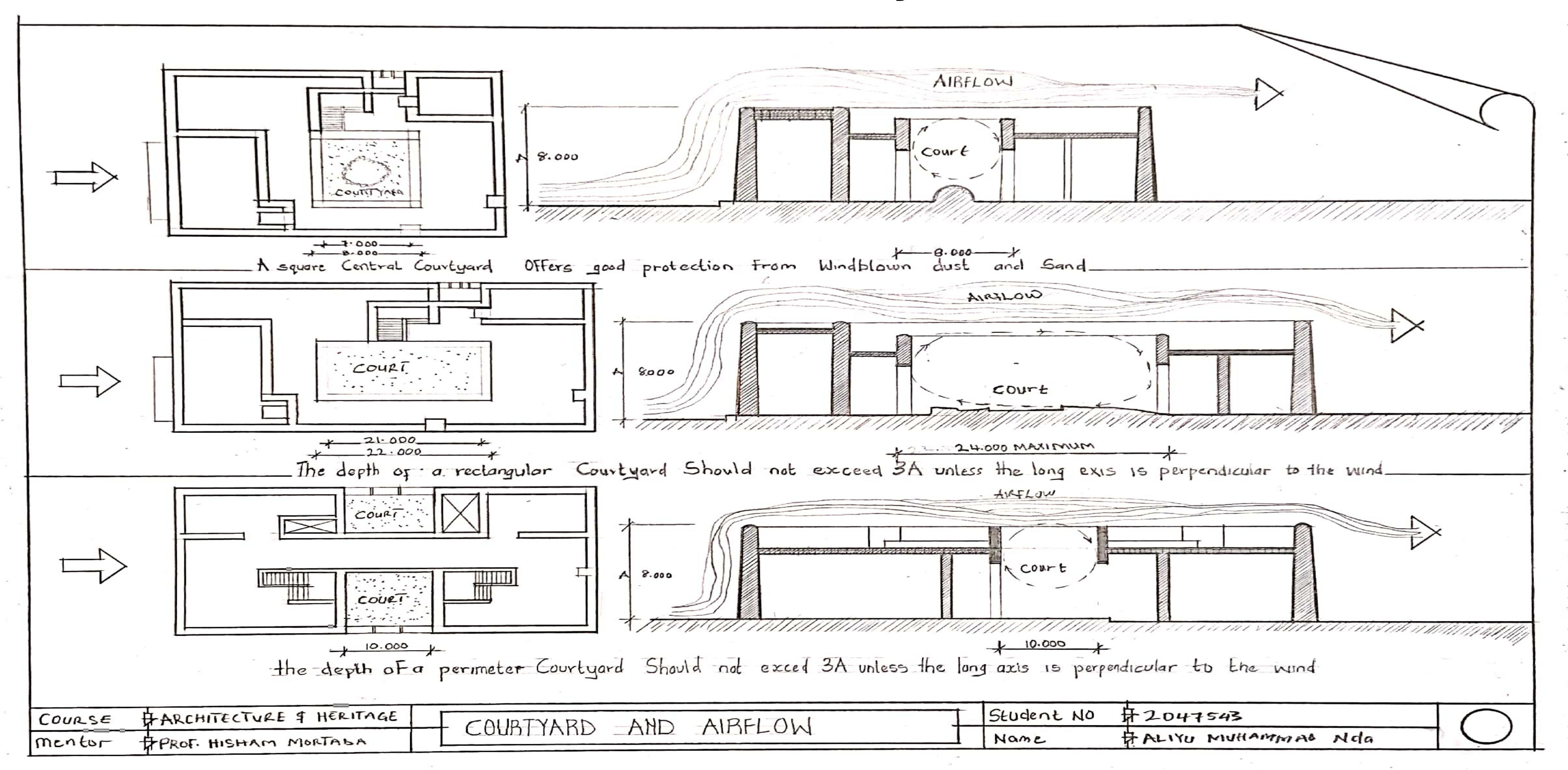


Rainfall

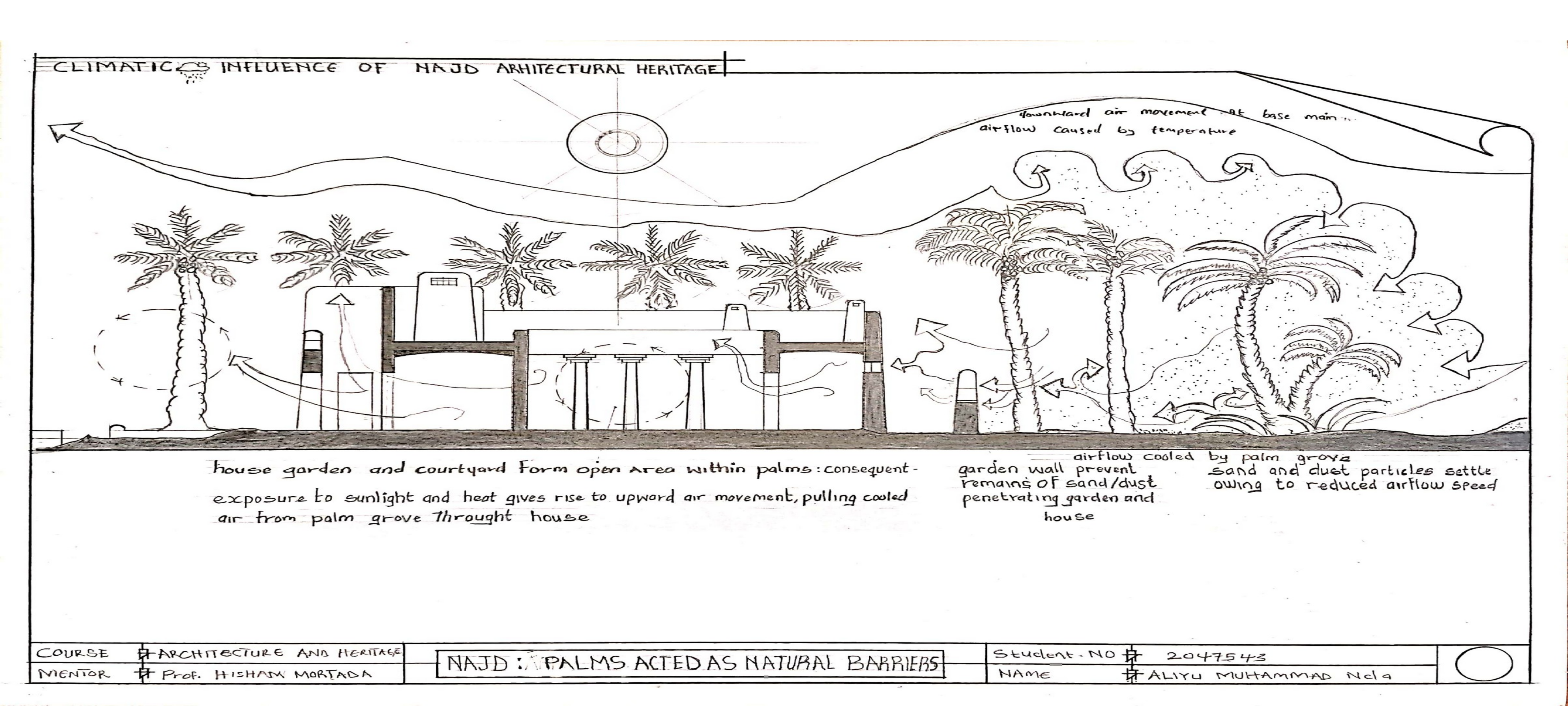




Manual illustration of courtyard and airflow



Manual illustration of palms as a barrier :



③ Illustration

During the day, The Sun heat The Courtyard. Warm Air Rises Creating a Chimney Effect And pulls Breeze through The Rooms.

①

In the Evening, the Courtyard And Buildings Retain heat then give It Off As the Night Air Cools.

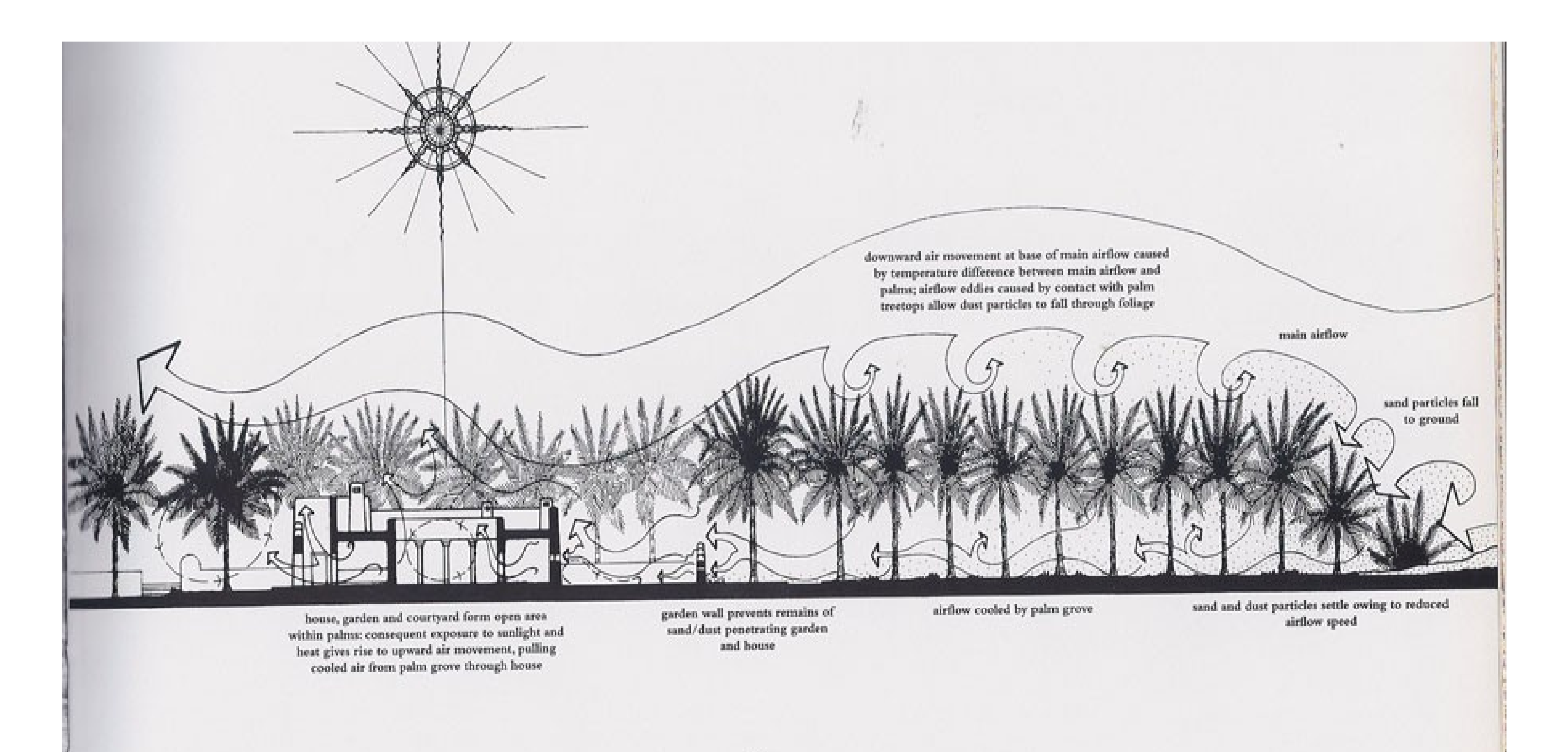
②

During the Night the Courtyard And Roof Act As a Cool Air Sink



COURSE	ARCHITECTURE $ HERITAGE	COURTYARD AND AIRFLOW	Student NO:	2047543
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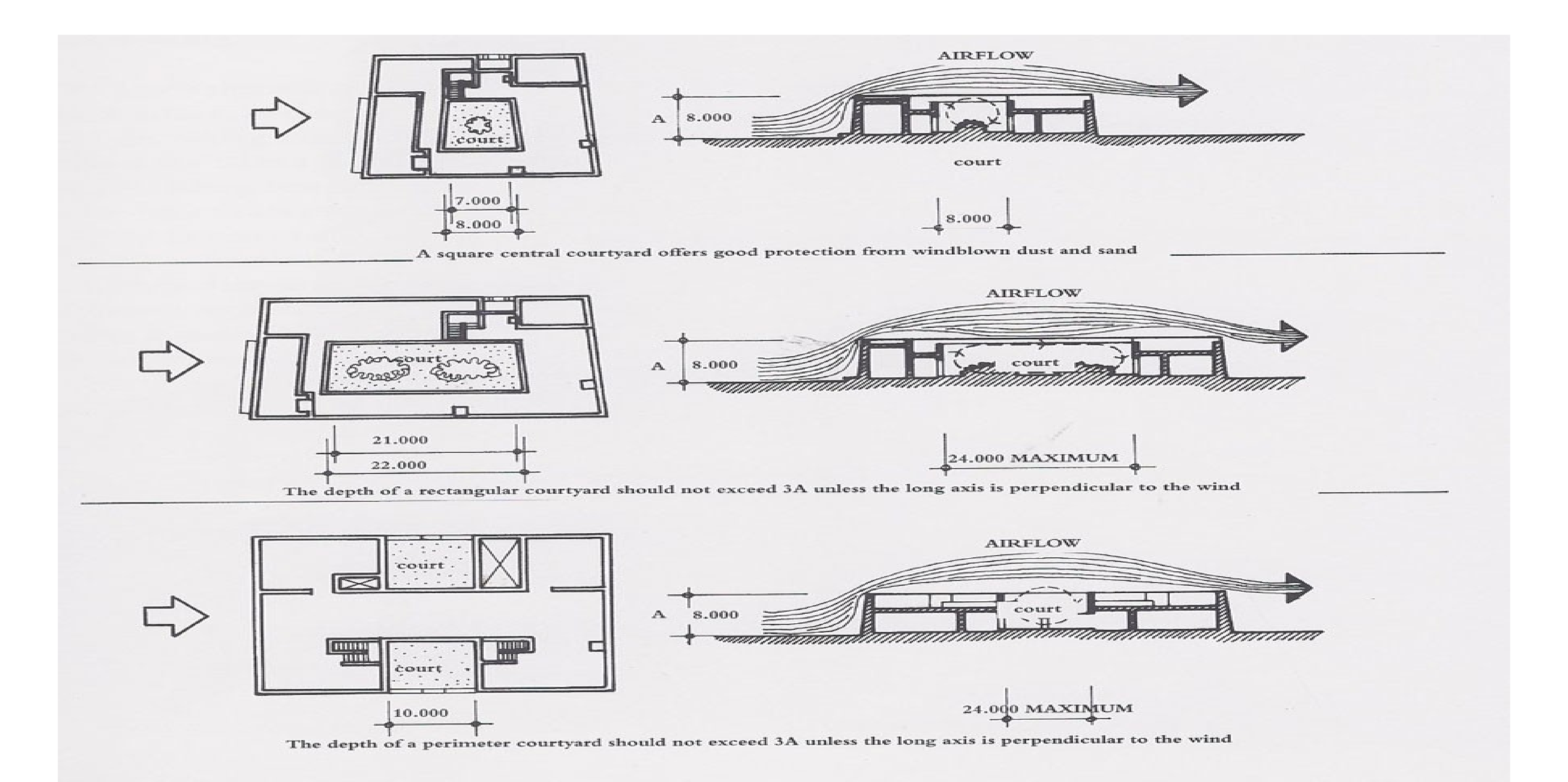
The palms acted as natural barriers:



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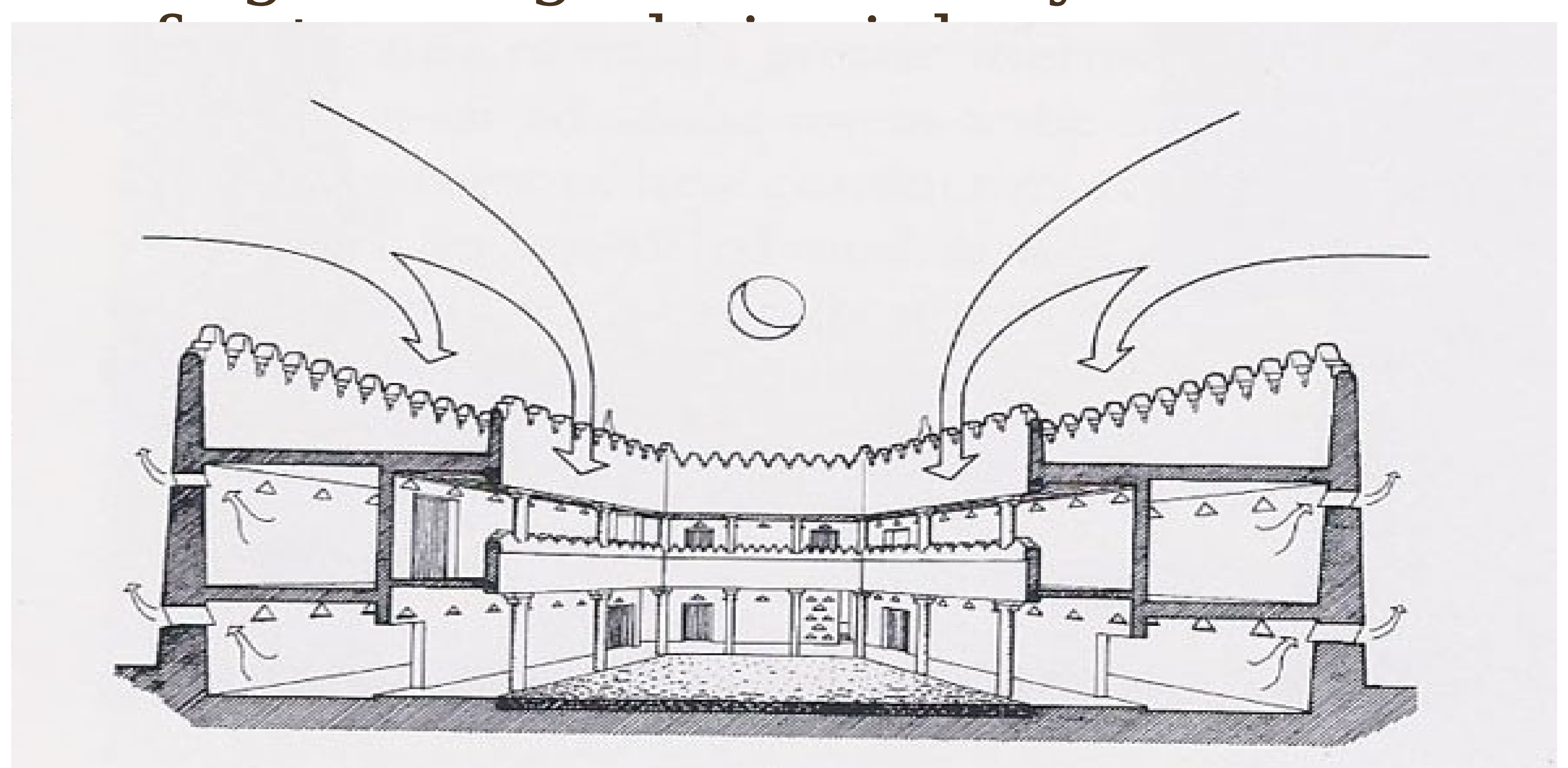
One key aspect was to surround the house with palm trees. The palms acted as natural barriers against the sand. The air was cooled as it swept through the shaded areas under the palms. Upon reaching the garden, walls kept any remaining dust and sand from entering the house.

Courtyard and airflow:

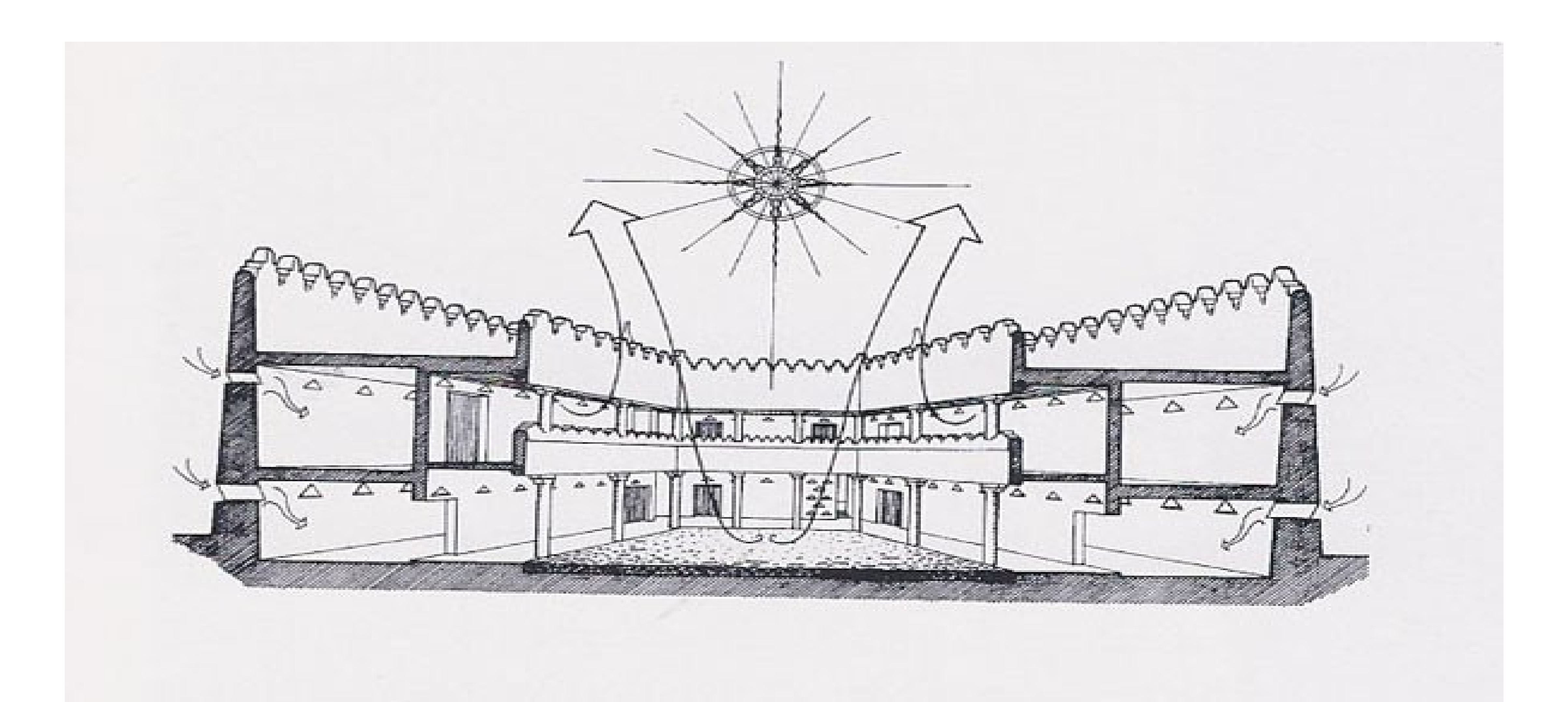


- *Courtyard and airflow*
  Besides surrounding the house with walls, central courtyards are a key feature of these mud houses. The wind passing over creates a low-pressure zone in the courtyard. This sucks in eddies but the low-pressure is counteracted by well-placed apertures in the rooms into the courtyard.

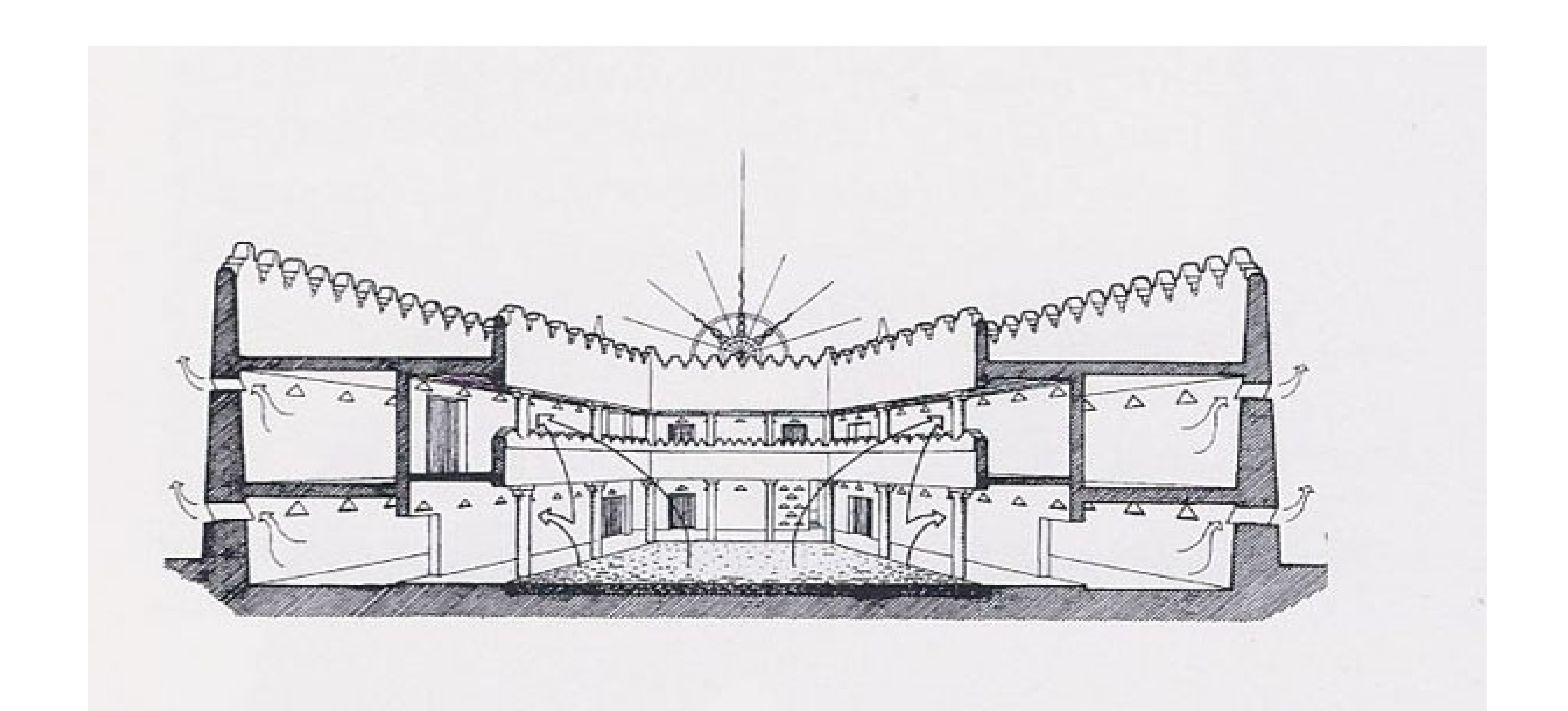
During the night, the courtyard and



During the day, the sun heats the courtyard. Warm air rises creating a chimney effect and pulls breeze through the rooms.



In the evening, the courtyard and buildings retain heat then give it off as the night air cools.



Small windows:



Influence:

- Small windows and are above human high which increases support to privacy and security.

- Due to nature of the environment, small windows are made to support comfort and good habitation to the interior spaces as well as to the occupant